



SLOVENSKI STANDARD

SIST EN 14465:2004

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Tekstilije - Dekorativni in tapetniški materiali - Specifikacija in preskusne metode

Textiles - Upholstery fabrics - Specification and methods of test

Textilien - Möbelstoffe - Spezifikation und Prüfverfahren

Textiles - Etoffes pour ameublement - Spécification et méthodes d'essai

Ta slovenski standard je istoveten z: EN 14465:2003

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59.080.30

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Textile fabrics

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EUROPEAN STANDARD
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Textiles - Upholstery fabrics - Specification and methods of test

Textiles - Etoffes pour ameublement - Spécification et
méthodes d'essai

Textilien - Möbelstoffe - Spezifikation und Prüfverfahren

This European Standard was approved by CEN on 3 November 2003.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland and United Kingdom.

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Foreword

This document (EN 14465:2003) has been prepared by Technical Committee CEN/TC 248 "Textiles and textile products", the secretariat of which is held by BSI.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by June 2004, and conflicting national standards shall be withdrawn at the latest by June 2004.

Annex A is normative. Annexes B and C are informative.

This document includes a Bibliography.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland and the United Kingdom.

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EN 14465:2003 (E)

Introduction

The assessment of upholstery fabrics is a complicated task. There is a multitude of experimental data available, but interlaboratory testing shows a large scattering of test results, in particular for abrasion testing, thus leading to important differences in quality perception. Furthermore the correlation between laboratory testing and actual wear behaviour in practice is not very well established.

This European Standard also introduces a system of categories. It is not possible to divide upholstery fabrics into just a few performance classes, because of the enormous variety of conditions of use. Also the type of upholstery (firm or soft) influences the abrasion of the upholstery fabric and hence the requirements to the abrasion resistance. There is for example a tremendous difference between furniture used in a room without windows and furniture which is directly exposed to sunlight, or between furniture used by elder people and furniture used by a family with small children. These differences in conditions and severity of use necessitate a flexible approach. This is done by defining a number of categories for each property. This allows to choose the appropriate category for each parameter and so to compose a "product profile", adapted to each specific type of use. This means that high resistance to abrasion can be combined with for example low colour fastness. Due to the interrelation of some parameters however, not all combinations will be possible. The categorization system should absolutely not be interpreted as if an upholstery fabric needs to be rated "A" for all properties in order to obtain an "A" category.

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1 Scope

This standard specifies a set of properties relevant to the assessment of upholstery fabrics for indoor furniture and the appropriate test methods to determine these properties. It also describes a matrix system to express the material properties of an upholstery fabric.

This standard applies to upholstery fabrics both in domestic and public use, except when used for the seats of road or railway vehicles, boats or aeroplanes.

This standard does not apply to upholstery fabrics with a coating on the wear face.

2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text, and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

- EN ISO 105-B02:1999 *Textiles - Tests for colour fastness - Part B02: Colour fastness to artificial light: Xenon arc fading lamp test (ISO 105-B02:1994, including amendment 1:1998).*
- EN ISO 105-C06 *Textiles - Tests for colour fastness - Part C06: Colour fastness to domestic and commercial laundering (ISO 105-C06:1994).*
- EN ISO 105-D01 *Textiles - Tests for colour fastness - Part D01: Colour fastness to dry cleaning (ISO 105-D01:1993).*
- EN ISO 105-E01 *Textiles - Tests for colour fastness - Part E01: Colour fastness to water (ISO 105-E01:1994).*
- EN ISO 105-X 12 *Textiles - Tests for colour fastness - Part X12: Colour fastness to rubbing (ISO 105-X12:2001).*
- EN ISO 6330 *Textiles - Domestic washing and drying procedures for textile testing (ISO 6330:2000).*
- EN ISO 12945-2 *Textiles - Determination of fabric propensity to surface fuzzing and to pilling - Part 2: Modified Martindale method (ISO 12945-2:2000).*
- EN ISO 12947-1 *Textiles - Determination of the abrasion resistance of fabrics by the Martindale method - Part 1: Martindale abrasion testing apparatus (ISO 12947-1:1998).*
- EN ISO 12947-2:1998 *Textiles - Determination of the abrasion resistance of fabrics by the Martindale method - Part 2: Determination of specimen breakdown (ISO 12947-2:1998).*
- EN ISO 13934-1 *Textiles- Tensile properties of fabrics - Part 1: Determination of maximum force and elongation at maximum force using the strip method (ISO 13934-1:1999).*
- prEN ISO 13936-2 *Textiles - Determination of the slippage resistance of yarns at a seam in woven fabrics - Part 2: Fixed load method (ISO/DIS 13936-2:2002).*

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EN ISO 13937-3 *Textiles - Tear properties of fabrics - Part 3: Determination of tear force of wing-shaped test specimens (Single tear method) (ISO 13937-3:2000).*

ISO 5077 *Textiles - Determination of dimensional change in washing and drying.*

3 Terms and definitions

For the purposes of this European Standard, the following terms and definitions apply.

3.1**flat woven fabric**

woven fabric in which two thread groups, warp threads and weft threads, cross at right angles

3.2**chenille fabric**

woven fabric containing a chenille yarn in warp and/or weft

3.3**knitted fabric**

fabric produced using the knitting principle, where the fabric is formed by the intermeshing of loops of yarn

3.4**pile fabric**

woven or knitted fabric which, in addition to the ground thread structure, includes a third thread system forming the pile

3.4.1**uncut pile fabric**

pile fabric with closed pile loops, e.g. epingle

3.4.2**cut pile fabric**

pile fabric with cut pile loops, e.g. velvet-like or velours

3.5**flocked fabric**

fabric where the pile (flock) is fixed onto a textile substrate

3.6**nonwoven fabric**

fabric with a velvet-like surface, usually consisting of ultrafine fibres, e.g. polyester microfibres, impregnated with polyurethane (tangled fleece)

3.7**raised fabric**

upholstery fabric having a surface with a nap finish, e.g. a brushed surface

4 Requirements

Upholstery fabrics shall meet the requirements of Table 1 in function of their construction type and in correspondence with the performance profile claimed by the manufacturer or required by the user's product specification. The levels indicated by shaded boxes in Table 1 are not applicable, e.g. a colour fastness to light less than 4 is considered insufficient.

NOTE A material profile is composed of the different categories obtained for each of the properties, i.e. the 'category' columns in Table 1 should not be understood as if a fabric has to meet or exceed all the requirements specified in the first column (best performance) to be qualified as a first class product. The material profile is merely a way of expressing properties in categories rather than in figures. Hence these categories can vary for the different properties, e.g. a fabric can obtain a certain category for tensile strength and a totally different category for seam slippage.

If additional properties are claimed by the manufacturer or required by the user's product specification, test results shall be provided based on the test methods specified in this standard (see optional properties in Table 2).

Detachable covers shall meet the requirements specified in Table 3 with regard to colour fastness and dimensional stability after washing or dry cleaning in accordance with the manufacturer's information.

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Table 1 – Material properties

Property	Test method	Units	Performance level				
			A	B	C	D	E
Tensile strength ^a	EN ISO 13934-1	N	> 600	≥ 400	≥ 350	≥ 250	
Tear strength ^a	EN ISO 13937-3	N	≥ 40	≥ 30	≥ 25	≥ 20	≥ 15
Seam slippage ^a	prEN ISO 13936-2	mm	≤ 4	≤ 5	≤ 6		
Bursting strength ^b	EN ISO 13938 –1	kPa	≥ 600	≥ 400	≥ 200		
Abrasion resistance	— see annex A of this standard:	ruhs (x 1000)					
	— flat woven fabrics		≥ 35	12-30	4-10		
	chenille fabrics		≥ 35	12-30	4-10		
	knitted fabrics		≥ 35	12-30	4-10		
	cut pile fabrics		≥ 45	25-40	10-20		
	uncut pile fabrics		≥ 45	25-40	10-20		
	flock		≥ 45	25-40	10-20		
	nonwovens		≥ 45	25-40	10-20		
	raised fabrics		≥ 35	12-30	4-10		
Pilling resistance ^c	EN ISO 12945-2 after 2000 rubs	grade 1 to 5	≥ 4-5	4	3-4	3	
Colour fastness to light ^d	EN ISO 105-B02 (method 2) ^e	grade 1 to 8	≥ 6	5	4		
Colour fastness to rubbing (dry)	EN ISO 105-X12	grade 1 to 5	≥ 4	3-4	3		
Colour fastness to rubbing (wet)	EN ISO 105-X12	grade 1 to 5	≥ 3-4	3	2-3		

^a These properties shall be determined for all fabrics except for knitted fabrics and nonwovens.

^b This property shall be determined only for knitted fabrics and nonwovens; a diaphragm of 50 cm² and a volume increase of 100 cm³/min shall be used.

^c This property shall be determined for flat woven fabrics, knitted fabrics (without pile), uncut pile fabrics and nonwovens; the standard wool abradant (as described in EN ISO 12947-1) shall be used and the performance level shall be determined after 2000 rubs, but the test shall be continued to 5000 rubs and the rating (on the scale of 1 to 5) at that point shall also be reported. The test result at 5000 rubs is purely informative.

^d An allowance of 0,5 scale point is made for light colours.

^e Method 3 may be used for quality control purposes.

Table 2 - Optional material properties

Property	Test method	Units	Performance level	
			A	B
Colour fastness to water	EN ISO 105-E01	grade 1 to 5		
	— change in colour		≥4	3-4
	— staining		≥3-4	3
NOTE In particular for light shades and undyed fabrics it can be useful to obtain additional information on colour fastness to water spotting. To this purpose the test method described in annex B (informative) can be used.				

Table 3 – Additional material properties for detachable covers^a

Property	Test method	Units	Performance level		Remark
			A	B	
Colour fastness to hand washing	EN ISO 105-C06 A2S	grade 1 to 5			
	— change in colour		4-5	4	
	— staining		4	3-4	
Colour fastness to machine washing	EN ISO 105-C06 ^a	grade 1 to 5			
	— change in colour		4-5	4	
	— staining		4	3-4	
Colour fastness to dry cleaning	EN ISO 105-D01	grade 1 to 5	4-5	4	
Dimensional change in washing and drying	ISO 5077	%	± 2	± 3	Washing procedure to be selected from EN ISO 6330 in accordance with care instructions
^a Relevant properties, washing and dry cleaning procedures and the corresponding methods of test shall be selected from this table in accordance with the manufacturer's care labelling.					

5 Test report

See annex C (informative).

Annex A

(normative)

Abrasion resistance - Determination of specimen breakdown

A.0 Introduction

This normative annex specifies the modifications to EN ISO 12947-2 needed for the evaluation of upholstery fabrics.

In order to facilitate the reading of this annex, the numbering of EN ISO 12947-2, preceded by an "A", has been maintained. Only the modified requirements are mentioned; when the requirement is the same as in the original test method, the wording "no change" is used.

A.1 Scope

This annex is based on EN ISO 12947-2 and is applicable to upholstery fabrics. It specifies the procedure for the determination of specimen breakdown end-point of test by inspection at fixed intervals.

A.2 Normative references

See EN ISO 12947-2.

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A.3 Definitions

A.3.1 Thread

See EN ISO 12947-2.

A.3.2 Specimen breakdown

Specimen breakdown is reached - by convention - when:

- in a flat woven fabric three threads are completely broken;
- in a knitted fabric (without pile) a hole appears due to one completely broken thread;
- in a woven pile fabric pile spots of 5 mm² are fully worn off¹, without any damage to the warp/weft threads;
- in a knitted pile fabric pile spots of 5 mm² are fully worn off¹ without any damage to the warp/weft threads;

¹ Significant changes in structure or appearance, such as the loss of pile tufts, the loss of flock or the breakdown of pile loops should be reported in the test report as well as the evaluation interval at which this occurs. However, this information is purely informative.